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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

VERINATA HEALTH, INC., Plaintiff and Counterclaim-Defendant, vs. ARIOSA DIAGNOSTICS, INC., Defendant and Counterclaim-Plaintiff.	Lead Case No. 3:12-cv-05501-SI Case No. 3:14-cv-01921-SI Case No. 3:15-cv-02216-SI **ARIOSA DIAGNOSTICS, INC.'S, NOTICE OF MOTION AND MOTION FOR JUDGMENT AS A MATTER OF LAW UNDER RULE 50(a) AND MOTION FOR JUDGMENT ON PARTIAL FINDINGS UNDER RULE 52(c); MEMORANDUM IN SUPPORT** Judge: Hon. Susan Illston
ILLUMINA, INC., Plaintiff and Counterclaim-Defendant vs. ARIOSA DIAGNOSTICS, INC., Defendant and Counterclaim-Plaintiff.	

ILLUMINA, INC.,

Plaintiff and Counterclaim-Defendant

vs.

ARIOSA DIAGNOSTICS, INC.,

Defendant and Counterclaim-Plaintiff.

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NOTICE OF MOTION AND MOTION

PLEASE TAKE NOTICE that on January 22, 2018 at the close of Defendant Ariosa Diagnostics, Inc.'s case-in-chief and the close of the evidence, in Courtroom 1 before the Honorable Judge Susan Illston, 450 Golden Gate Avenue, San Francisco, California, Defendant and Counterclaim Plaintiff Ariosa Diagnostics, Inc. ("Ariosa") moved for judgment as a matter of law ("JMOL") pursuant to Fed. R. Civ. P. 50(a) and for judgment on partial findings pursuant to Fed. R. Civ. P. 52(c). Ariosa articulated grounds for this motion orally on the record and submits this memorandum in further support of the motion.

Ariosa's Motion for Judgment as a Matter of Law is made on the basis that a reasonable jury could only find in Ariosa's favor on the issues of invalidity, express license, Ariosa's claims for breach of contract, and the issue of willful injury. Specifically, the evidence that has been presented at trial demonstrates that a reasonable jury could only find in Ariosa's favor when deciding (1) whether the '794 and '430 patents are invalid, (2) whether the 2012 Sale and Supply Agreement ("SSA") granted Ariosa an express license to the '794 patent, (3) whether Illumina breached the terms of the SSA or breached the covenant of good faith and fair dealing with respect to the SSA, and (4) whether Illumina willfully injured Ariosa such that the limitation of liability clause in section 18 of the parties' Sale and Supply Agreement does not apply. Ariosa also supplements its motion for Judgment as a Matter of Law on infringement, willfulness, and damages (Dkt. 594) with additional evidence presented during the trial, including testimony from Dr. Cooper and Ryan Sullivan presented during Ariosa's case. This evidence, along with evidence presented as of the time of Ariosa's motion, further confirms that a reasonable jury could not find in favor of Plaintiffs and that Ariosa is entitled to judgment as a matter of law on infringement, willfulness, and damages.

Ariosa's Motion for Judgment on Partial Findings is made on the basis that the evidence presented at trial could only support a finding by this Court in Ariosa's favor on the issues of assignor estoppel and equitable estoppel. Specifically, the evidence that has been presented at trial demonstrates that this Court could only find in Ariosa's favor when deciding (1) that Drs. Stuelpnagel and Oliphant did not make a significant contribution to the conception of one or more

of the '794 patent claims that Illumina claims are infringed and hence the factual predicate for Plaintiffs' allegation of assignor estoppel is absent and (2) that Illumina's statements, omissions, or other conduct lead Ariosa to reasonably infer that Illumina did not believe that Ariosa was infringing or otherwise would not sue Ariosa for infringement of the '794 patent, and that Ariosa reasonably relied on such statements, omissions and conduct, such that Plaintiffs are equitably estopped from asserting claims of patent infringement.

This Motion is based on the testimony and evidence admitted at trial, the oral motion for judgment as a matter of law and judgment on partial findings made during trial, the Motion for Judgment as a Matter of Law submitted as Dkt. 594, all pleadings, exhibits, and records in this action, and such other papers, evidence, and/or argument as may be submitted to the Court in connection with this Motion or that the Court may take notice or otherwise consider.

MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

Ariosa moves for judgment as a matter of law in its favor pursuant to Rule 50(a) of the Federal Rules of Civil Procedure and judgment on partial findings pursuant to Rule 52(c) of the Federal Rules of Civil Procedure. The evidence permits only a finding in Ariosa's favor on Ariosa's claim of breach of contract and breach of the implied covenant of good faith and fair dealing; Ariosa's affirmative defenses of invalidity of the '794 and '430 patents and express license; Plaintiffs' affirmative defense of assignor estoppel; and Ariosa's affirmative defense of equitable estoppel. Ariosa therefore brings its Motion for Judgment as a Matter of Law because a reasonable jury could only conclude that (1) the '794 and '430 patents are invalid; (2) the SSA granted Ariosa an express license to the '794 patent; (3) Illumina breached the SSA and the covenant of good faith and fair dealing; and (4) Illumina willfully injured Ariosa via its breach. Similarly, the evidence at trial establishes that a reasonable jury could only find in favor of Ariosa on infringement, willfulness, and damages.

The issues of assignor estoppel and equitable estoppel also can and should be disposed of at this time. The evidence only supports the conclusion that Drs. Stuelpnagel and Oliphant did not make a significant contribution to the conception of one or more of the '794 patent claims. As a

result, there is no basis for the Court to conclude that Ariosa may not challenge the validity of the '794 patent under the doctrine of assignor estoppel. The evidence also compels the conclusion that Illumina's statements, omissions, or other conduct led Ariosa to reasonably infer that Illumina did not believe that Ariosa was infringing and otherwise would not sue Ariosa for infringement of the '794 patent, that Ariosa reasonably relied on such statements, omissions and conduct, compelling the conclusion that Plaintiffs are equitably estopped from asserting claims of infringement in this case.

II. ARGUMENT

A. Judgment As A Matter Of Law Under Rule 50(a)

Judgment as a matter of law is appropriate if "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed. R. Civ. P. 50(a). In making this determination, "the court should review all of the evidence in the record, not merely the evidence favorable to the non-moving party." *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000). Rule 50 "allows the trial court to remove . . . issues from the jury's consideration when the facts are sufficiently clear that the law requires a particular result." *Weisgram v. Marley Co.*, 528 U.S. 440, 448 (2000) (internal quotations omitted). The standard for granting judgment as a matter of law mirrors the standard for granting summary judgment, and "the inquiry under each is the same." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 250-51 (1986); *see also Cordis Corp. v. Boston Scientific Corp.*, 658 F.3d 1347, 1357 (Fed. Cir. 2011) ("The question is not whether there is literally *no evidence* supporting the unsuccessful party, but whether there is evidence upon which a reasonable jury could properly have found its verdict.").

1. A Reasonable Jury Could Only Find In Ariosa's Favor On Its Affirmative Defense Of Invalidity

(a) The '794 Patent Must Be Found Invalid For Anticipation

A patent claim is invalid if anticipated by a prior art reference. 35 U.S.C. §§ 102(a), 102(b); *Flex-Rest, LLC v. Steelcase, Inc.*, 455 F.3d 1351, 1358-60 (Fed. Cir. 2006). A patent claim is invalid as anticipated under 35 U.S.C. § 102(a) if "the claimed invention was patented,

described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention." A patent claim is invalid as anticipated under 35 U.S.C. § 102(b) if "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States." *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015).

A determination of anticipation involves two analytical steps. The first step is construing the claims, which is a question of law. The second step is a comparison of the construed claims to the prior art, which is a question of fact. *See In re Crish*, 393 F.3d 1253, 1256 (Fed. Cir. 2004). A prior art reference anticipates a claim "if it discloses all of the claimed limitations 'arranged or combined in the same way as in the claim.'" *Wm. Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1361 (Fed. Cir. 2012) (quoting *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1370 (Fed. Cir. 2008)). "However, a reference can anticipate a claim even if it does not expressly spell out all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would at once envisage the claimed arrangement or combination." *Kennametal*, 780 F.3d at 1381 (citation omitted).

Ariosa is entitled to judgment as a matter of law that the '794 patent is invalid as anticipated by the Straus reference. Ariosa's expert Dr. Cantor provided unrebutted testimony that the specification of Straus, including Figure 5 and additional disclosures in text of Straus, disclosed all of the elements of the asserted claims of '794 patent. Trial Tr. 1465:16-18 (describing Straus as "exactly the same" as the '794 patent); *id.* at 1467:9-1476:7 (mapping all elements of '794 patent claims to Straus reference). As such, a reasonable jury could only find that the '794 patent is invalid for anticipation.

Illumina's response to Dr. Cantor's testimony was the legally spurious assertion that all the elements of the asserted claims needed to be disclosed in a single figure of the prior art reference, or perhaps a single passage in the disclosure. In particular, Plaintiffs contended that Figure 5 itself in isolation did not disclose all elements. Trial Tr. 1500:23-1504:1; *id.* at 1599:1-9. Plaintiffs then contended that additional disclosure in the Straus specification should be disregarded because

three elements—"at least 100 different target sequences," "more than 100 different single stranded probes," and "identical universal priming sites"—were mentioned in the text of that disclosure but not expressly linked to Figure 5.[1] These assertions are without basis and contrary to settled case law on anticipation. As noted above, "a reference can anticipate a claim even if it does not expressly spell out all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would at once envisage the claimed arrangement or combination." *Kennametal*, 780 F.3d at 1381 (citation omitted).

Any reasonable review of Straus confirms that it anticipates the '794 patent. Straus expressly states that the "sequences" being analyzed in his method "might consist of 100 ID sequences." Ex. 1044 at ¶ 138. To the extent that Plaintiffs argue that the example illustrated in Figure 5 only depicts 48 different targets, this is a straw man. Not only is the number of samples depicted purely illustrative in the figure, there is no suggestion anywhere in Straus that the disclosure of a target sequences consisting of "at least 100" different targets did not apply to Figure 5 or the entirety of the disclosure in Straus. Trial Tr. 1468:8-20. Any suggestion to the contrary lacks credulity and cannot sustain a reasonable jury finding. The same analysis holds for any suggestion that Straus does not disclose "more than 100 different single-stranded probes" that each "has identical universal priming sites." Straus expressly states that his invention may include "more than two hundred and fifty[] different amplifiable probes." Ex. 1044 at ¶ 39; Trial Tr. at 1470:5-14. Straus also expressly states that his invention "avoids the usual amplification artifacts that arise during multiplex amplification by using a very small number of amplification sequences

[1] *See* Ex. 1044 at ¶ 39 ("In preferred embodiments, the probes of (a) include … more than two hundred and fifty[] different amplifiable probes"); *id.* at ¶ 138 ("For example, a family of ID sequences might consist of 100 ID sequences…"); *id.* at ¶ 176 (disclosing "using a very small number of amplification sequences to direct the amplification of a large number of distinct ID probes," wherein that small number can be "one or more primer binding sites … common to most or all of the probes…"); Trial Tr. at 1597:24-1598:9 (Cooper discussing claim requirement for "at least 100" only in the context of Figure 5); *id.* at 1598:10-1600:1 (Cooper discussing claim requirement for "more than 100 different single-stranded probes" only in the context of Figure 5); *id.* at 1600:2-1602:18 (Cooper discussing the "identical universal priming site" limitation but failing to rebut or address Dr. Cantor's opinions regarding the disclosure at Straus, Exhibit 1044, ¶ 176); *id.* at 1470:15-1471:15 (Cantor explaining disclosure of '794 patent "identical universal priming site" element in Straus ¶ 176); *id.* at 1503:21-1404:1 (same).

to direct the amplification of a large number of distinct ID probes," providing as an example, that the probes contain "one or more primer binding sites" that are "common to most or all of the probes." Ex. 1044 at ¶ 176; Trial Tr. at 1470:15-1471:15 (explaining that this disclosure describes identical universal priming sites); *id.* at 1503:20-1504:1 (same); *id.* at 1504:15-21).

Ariosa has met its burden of proving anticipation as a matter of law. No reasonable jury could reach any conclusion other than that the '794 patent is invalid for anticipation in light of Straus.

(b) The '430 Patent Is Invalid For Lack Of Written Description And Enablement

The trial record also compels the conclusion that the '430 patent is invalid under section 112 for lack of written description and enablement, and that no reasonable jury could conclude otherwise. 35 U.S.C. § 112 requires that "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same . . . ." 35 U.S.C. § 112. To satisfy the written description requirement, the specification must "describe the invention sufficiently to convey to a person of skill in the art that the patentee had possession of the claimed invention at the time of the application." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

A patent also must "enable any person skilled in the art . . . to make and use" the claimed invention. 35 U.S.C. § 112(a). "To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *ALZA Corp. v. Andrx Pharm.*, LLC, 603 F.3d 935, 940 (Fed. Cir. 2010) (quoting *Genentech Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997)). Factors considered in determining whether persons skilled in the art would require undue experimentation to make and use the full scope of the claimed invention include: the breadth of the claims; the nature of the invention; the state of the prior art; the level of one of ordinary skill in the art; the level of predictability in the art; the amount of direction provided by the specification; the existence of working examples; and the quantity of experimentation needed to make or use the

invention based on the content of the disclosure. *See In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

A reasonable jury could only conclude that the '430 patent is invalid under section 112. It is undisputed that the '430 patent does not disclose any actual algorithm that could be used in claim step 1(f), which requires "….determining the presence or absence of a fetal aneuploidy comprising using a number of enumerated sequence reads corresponding to the first chromosome and a number of enumerated sequence reads corresponding to the reference chromosome of (e)." Ex. 514 at 63:62-67. The patent fails to address in any way the necessary elimination of variability and "noise" caused by the high proportion of maternal cell-free DNA ("cfDNA") in a sample, which is present in vastly greater amounts than the fetal cfDNA. Trial Tr. 1479:5-1481:12; *id.* at 1344:8-10; 1345:16-1346:1. This "noise" is a barrier to any assessment of fetal aneuploidy in a targeted sequencing approach, and Dr. Rava, a named inventor, admitted the patent does not disclose any algorithm that could perform the crucial step of determining fetal aneuploidy. Trial Tr. 346: 15-25.

The evidence also established that the patentee for the '430 patent never reduced the alleged invention to practice or used it in any of their own tests. Trial Tr. 1480:13-17. Dr. Rava stated that he couldn't recall if he ever "attempted the[] approaches" set out in the '430 patent, Trial Tr. 351:7-9, and "do[es]n't recall if "[his] work on potentially using the method of the '430 patent ever got to the point of a fully formed algorithm." Trial Tr. 349:1-5. *See Ormco Corp. v. Allign Tech., Inc.*, 498 F.3d 1307, 1391 (Fed. Cir. 2007) (patentee's failure to reduce the invention to practice weighs strongly in favor of finding nonenablement).

Plaintiffs' attempt to rely on references incorporated by reference in the '430 patent to meet the disclosure requirements of section 112 is legally insufficient. The evidence shows that those references all pertain to random shotgun sequencing approaches, not the non-random targeted sequencing approach claimed in the '430 patent. Trial Tr. at 349: 6-22 (Dr. Rava confirming that all references in the '430 patent pertain to "random sequencing techniques"); *id.* at 1480:19-1481:5 (Dr. Cantor explaining that only random sequencing techniques are addressed by the incorporated references, and that they will not work in the claimed method); *id.* at 1360:24-

1362:29 (Dr. Wang testimony explaining that analysis of targeted sequencing data as used in Harmony functions in a manner very different from that of random shotgun sequencing). As such, that material related to *random* sequencing approaches is inapplicable and cannot be used to support the *non-random* sequencing approach that is claimed.

The trial record also establishes that the alleged invention of the '430 patent could not be implemented based on the disclosure without undue experimentation and effort, particularly as it relates to claim element 1(f). *See* Ex. 514 at 63:62-67 ("….determining the presence or absence of a fetal aneuploidy comprising using a number of enumerated sequence reads corresponding to the first chromosome and a number of enumerated sequence reads corresponding to the reference chromosome of (e)"). Testimony from Dr. Wang confirmed the difficulty and amount of effort Ariosa expended to develop and implement a complex algorithm to work in a targeted sequencing approach, and how there was no available literature to provide any guidance. Trial Tr. 1344:8-10; *id.* at 1345:16-1346:1; *id.* at 1346:23-1347:19. Indeed, he characterized it as being "day and night … routinely try[ing] out new things … very empirical trial and error, mainly because we don't know how to handle the new type of data that we were seeing." Trial Tr. 1346:2-7. Dr. Cantor likewise confirmed that Sequenom, the NIPT company at which he is the former Chief Scientific Officer, tried to develop the same approach that is claimed in the '430 patent, but was unable to do so because it simply would not work. Trial Tr. 1479:5-1481:12. As the Federal Circuit has previously explained, the fact that the alleged infringer's "expert was not able to carry out the entire process as set forth in the . . . patent" supported a claim of nonenablement. *Old Town Canoe Corp. v. Confluence Holdings Corp.*, 448 F.3d 1309, 1320 (Fed. Cir. 2006).

Dr. Cantor further explained that Ariosa had to "invest a huge effort" into making its own FORTE algorithm work for targeted sequencing, the level of which he cites as the reason the effort failed at Sequenom. *Id.* at 1480:7-18. There is nothing remotely comparable to FORTE in the '430 patent, as the evidence confirms. Trial Tr. 1480:7-1481:9. Plaintiffs failed to address or rebut the level of undue experimentation to which Drs. Wang and Cantor testified, particularly as to the use of an algorithm to carry out claim element 1(f). Dr. Cooper also failed to address either written description or enablement with respect to the analysis and determining requirements of claim

element 1(f). Trial Tr. 1617:5-6 (Cooper opining that the disclosures of hotspot and chromosome walk demonstrated that the named inventors "performed an enrichment" as recited in claim element 1(b)); *id.* at 1617: 8-10 (distinguishing the testimony regarding hotspots and chromosome walk from "the bioinformatics" as required by claim element 1(f)).

The evidence therefore demonstrates that the '430 patent inventors did not have possession of the invention claimed in the patent, and that the patent fails to teach a person of ordinary skill in the art to practice the invention without incredibly undue experimentation.

2. A Reasonable Jury Could Only Find In Ariosa's Favor On Its Affirmative Defense Of Express License

The grant of a license to practice a patented technology provides a complete defense to a claim that actions that fall within the confines of the license constitute acts of infringement. *Intel Corp. v. VIA Tech., Inc.*, 319 F.3d 1357, 1364 (Fed. Cir. 2003). The evidence presented at trial requires a reasonable jury to conclude that in the 2012 Sale and Supply Agreement, Plaintiffs granted Ariosa an express license to the '794 patent. Thus, as a matter of law, Ariosa cannot be held liable for infringement.

Jeff Eidel, Illumina's VP of Corporate Development, expressly admitted that the '794 patent is "core Illumina IP in the NIPT context." Trial Tr. 1162:15-22; Eidel Deposition at 209:3-17. Dr. Naclerio further testified that the SSA provides "a license to Core Sequencing IP when you buy the reagents and use them in the field for the intended purpose." Trial Tr. 532:7-10 (testimony of Dr. Naclerio). Similarly, Jay Flatley explained that Ariosa had a license to Core IP Rights in Goods when operating in the Customer Field of Use. Trial Tr. at 662:7-15 ("Q. Okay. But when operating in that Customer Field of Use, it had a license to what's written here: Core IP Rights in Goods; correct? A. That's the general idea of this license, yes, mm-hm."). Because Illumina's own witnesses have admitted that (1) the '794 patent is "core Illumina IP" and (2) the SSA provides a license to core IP, a reasonable jury could only find that the SSA provided Illumina with an express license to practice the '794 patent.

John Stuelpnagel provided uncontradicted testimony of the parties' negotiating process leading up to the signing of the SSA that further confirms that the SSA included an express license

to the '794 patent because it included rights for Ariosa's planned use of Illumina's products. Dr. Stuelpnagel testified that, when negotiating the SSA, the parties exchanged mark-ups of the SSA with proposed modifications. Trial Tr. 812:2-13. During one round of mark-ups, he testified how Ariosa sought to clarify with Illumina what "core IP rights in goods" meant. *Id*.; Trial Ex. 1172. He further testified how Illumina did not want to list the exact IP contained within the "core IP rights" on the grounds that this would be "too cumbersome." Trial Tr. 814:23-25. Instead, Crane Harris, one of Illumina's lead negotiators of the SSA, stated: "We are not looking to complete the other parties' freedom to operate analysis, so we are just saying that ***to the degree you need IP from us for this particular application, or these core uses you have it, but you don't need to look through our IP to do that***." Ex. 718; Trial Tr. 1515 (Harris deposition played at trial). Mr. Harris then proposed the inclusion of a clause stating that, based on Illumina's knowledge at the time, Ariosa's "planned use" of Illumina's products did not require any further licenses. Trial Tr. 819:12-19; *see also* Trial Tr. 1036:25;1037:8 (Dr. Cooper's discussion of how a core part of his infringement analysis for V1 is based on Ariosa's use of Illumina's sequencing equipment).

Moreover, the evidence at trial established that the '794 patent is not "Secondary IP" as defined in the SSA, which is the only category of IP excluded from "Core IP." The SSA defines "Secondary IP Rights in Goods" as "the secondary Illumina intellectual Property Rights that pertain to the Goods (and use thereof) only with regard to particular field(s) or application(s), and are not common to the Goods in all applications and fields." Ex. 615. But Mr. Eidel admitted that Illumina does not consider the '794 patent to be application-specific, Trial Tr. 1161:25-1162:3, and Dr. Cooper further confirmed that "[t]he '794 can be used in a number of applications." Trial Tr. 1039:17-22. A reasonable juror therefore could only find that the SSA provide Ariosa with an express license to the '430 and '794 patents.

3. A Reasonable Jury Could Only Find In Ariosa's Favor On Its Claims Of Breach Of Contract And Breach Of The Covenant Of Good Faith And Fair Dealing

"The essential elements of a claim of breach of contract, whether express or implied, are the contract, plaintiff's performance or excuse for nonperformance, defendant's breach, and the resulting damages to plaintiff." *San Mateo Union High School Dist. v. County of San Mateo*, 213

Cal.4th 418, 439 (2013). Additionally, "a license is, by its nature, an agreement not to litigate. A licensor agrees to receive royalties or other consideration from the licensee in exchange for a covenant not to sue or disturb the licensee's activities." *MedImmune, Inc. v. Centocor, Inc.*, 409 F.3d 1376, 1379 n.1 (Fed. Cir. 2005), vacated on other grounds, 549 U.S. 1163 (2007); *see also TransCore, LP v. Elec. Transaction Consultants Corp.*, 563 F.3d 1271, 1275 (Fed. Cir. 2009) ("As a threshold matter, a patent license agreement is in essence nothing more than a promise by the licensor not to sue the licensee."). For the reasons explained above, the SSA provided Ariosa an express license to the '794 patent. Therefore, given the irrefutable fact that Plaintiffs have violated the express license provided for by the SSA and their previous representations regarding the intellectual property rights guaranteed by the SSA, a reasonable jury could only find that Plaintiffs breached the terms of the SSA.

The final element of a breach of contract action—harm—is also clearly established by the evidence at trial. Dr. Song, Ariosa's former CEO, testified that Ariosa's harm from Illumina's breach included $3 million in sunk costs to prepare for the IPO and substantial injury to Ariosa's business, including loss of $60 million in funding needed to expanded commercial operations and research and development, the inability to form relationships with distribution partners, an inability to promote the Harmony test to a wide range of women, the need to scramble to immediately shift from Illumina's sequencing platform to a microarray sequencing platform. Trial Tr. 1310:23-1314:8; *id.* at 1318:7-13. Ryan Sullivan, Ariosa's damages expert, further confirmed that, because of Illumina's breach, Ariosa lost the opportunity to acquire up to $60 million in funding that it would have gained from its IPO, Trial Tr. 1532:13-25, and saw a downturn in revenue because it was forced to cancel its IPO. Trial Tr. 1537:3-1538:18. Mr. Sullivan also explained how Roche's acquisition of Ariosa did not mitigate the harm Ariosa suffered from Illumina's breach because benefits from an IPO—such as direct capital infusions and greater name recognition—were absent in the Roche deal. Trial Tr. 1543:15-1545:3. All together, Mr. Sullivan conservatively estimated that the harm to Ariosa from Illumina's actions totaled $88.5 million. Trial Tr. 1545:7-9.

California law also recognizes a covenant of good faith and fair dealing in every contract. *Storek & Storek Inc. v. Citicorp Real Estate*, 100 Cal. App. 4th 44, 55 (2002). The covenant is based on "the long-standing rule that neither party will do anything which will injure the right of the other to receive the benefits of the agreement." *Waller v. Truck Ins. Exch., Inc.*, 11 Cal. 4th 1, 36 (1995). Indeed, the covenant is useful in exactly situations as here, where a party to a contract attempts to frustrate "the other party's rights to the benefits of the contract" even though they may claim that the conduct does "not technically transgress[] the express covenants" of the contract. *Racine & Laramie, Ltd. v. Dep't of Parks & Recreation*, 11 Cal. App. 4th 1026, 1031-32 (1992).

The SSA provided for more than just a simple transfer of sequencers and related products—it also involved the transfer of IP rights needed to use those Goods in the Harmony test. *See* Sec. II(A)(2), *supra*. Indeed, the entire purpose of the SSA for Ariosa was to use the Illumina goods to conduct and sell the Harmony test. Trial Tr. 807:11-25. Nevertheless, despite this purpose, the evidence presented at trial established that on April 24, 2014 at 7:12 pm, the day before Ariosa was set to begin the roadshow for its IPO, Illumina sent Ariosa a letter that contained pretextual assertions of breach of the SSA and that stated that Illumina reserved all rights to terminate the agreement an seek damages for breach. Trial Tr. 1304: 12-19. The very next day, on April 25, 2014, Illumina filed suit against Ariosa for infringement of the '794 patent. These pretextual assertions of breach of contract and patent infringement frustrated the intent of the SSA because they made clear to Ariosa that Illumina intended to abuse its power as Ariosa's sole supplier in order to force Ariosa out of the market after acquiring Verinata, Ariosa's direct competitor.

The timing of Illumina's breach letter and lawsuit relative to Ariosa's planned IPO makes Illumina's desire to frustrate the purpose of the SSA and harm Ariosa's business indisputably clear. Given the timing of Illumina's sudden assertion of breach and patent infringement, Ariosa was forced to cancel its IPO because it would have been nearly impossible to attract investors with Illumina's pretextual allegations and efforts to destroy its relationship with Ariosa looming overhead. Trial Tr. 1306:12-25.

While Illumina attempted to explain the timing of Illumina's breach letter and lawsuit as a "fantastic coincidence," that explanation was demonstrated at trial to be false, such that no reasonable juror could find that the timing of Illumina's breach letter and lawsuit was in good faith. *See* Trial Tr. 668:12-18 ("Q. You are aware that Ariosa never went forward with its IPO; correct? A. The timing there was totally coincidental. We had no idea that they were about to start a roadshow, or that they were ready to press. No idea. Q. It was just a fantastic coincidence? A. It was, actually."). For instance, this claim of a "fantastic coincidence" is contradicted by Mr. Eidel, who admitted that approximately 50 Illumina employees, including himself, Dr. Bird, Mr. Flatley, and seven Illumina attorneys, received an email at 7:53 am on April 25, 2014 announcing the price of Illumina's IPO. Trial Tr. 1128:2-1129:12. Illumina then filed suit against Ariosa later that day. Additionally, Jay Flatley, Illumina's former CEO, admitted to knowing that Ariosa was planning to conduct an IPO based on Ariosa's filing of a publically available Form S-1 with the SEC on March 24, 2014. Trial Tr. 685:6-686:7; *id.* at 568:1-5; Trial Ex. 1378 (Ariosa's Form S-1 dated March 24, 2014).

As with Ariosa's breach of contract claim, the damage that stemmed from Illumina's breach of the covenant of good faith and fair dealing is beyond dispute. Dr. Song testified, for instance, that not being able to go public limited Ariosa's growth opportunities and frustrated it from accomplishing its core mission: "it's about just the impact and the opportunity that we missed on by not being able to become a public company and really pursue the mission that we wanted to do from the very get-go when we started it." Trial Tr. 1318:7-13.

4. Ariosa Is Entitled To Judgment As A Matter Of Law On The Issue Of Willful Injury

Because Illumina willfully injured Ariosa as a result of its conduct in connection with breaching the parties' SSA and the covenant of good faith contained therein, Cal. Civ. Code § 1668 prevents the application of the Limitation of Liability Clause contained in Section 18 of the SSA. As used in section 1668, "willfulness generally is marked by three characteristics: (1) actual or constructive knowledge of the peril to be apprehended; (2) actual or constructive knowledge that injury is a probable, as opposed to a possible, result of the danger; and (3) conscious failure to

act to avoid the peril." *Calvillo-Silva v. Home Grocery*, 19 Cal.4th 714, 730 (1998); *see also Health Net of Cal., Inc. v. Dept. of Health Services*, 113 Cal. App. 4th 224, 234 (2003) (explaining that section 1668 applies to an "intentional wrong, gross negligence, or violation of law") (emphasis added); *see also FiTeq, Inc. v. Venture Corp.*, 169 F. Supp. 3d 948, 955 (N.D. Cal. 2016) ("Contractual releases of future liability for fraud and other intentional wrongs are invariably invalidated under California law.") (emphasis added). Willfulness is therefore properly equated with knowledge and intentionality; it does not require a showing of malice.

From this standard and based on all of the trial evidence laid out in Section II(A)(3), *supra*, regarding Illumina's breach of the SSA, a reasonable jury could only conclude that Illumina willfully injured Ariosa.

5. Ariosa Is Entitled To Judgment As A Matter Of Law On Damages For Any Alleged Infringement Of The '794 And '430 Patents

In Ariosa's previous Motion for Judgment as a Matter of Law (Dkt. 594), Ariosa presented testimony that established that, due to Plaintiffs' damages expert's (James Malackowski) failure to apportion, Plaintiffs had failed to present a legally sound basis on which the jury could award reasonable royalty damages. Dkt. 594 at p. 14. Ariosa further directs the Court to Mr. Malackowski's admission that he failed to apportion the value of significant non-patented features of the accused products. Even though Mr. Malackowski acknowledged that the success of Ariosa's products was in part dependent on features that are not accused of infringement, he agreed that he did not apportion when calculating the reasonable royalty rate that he proposed to the jury: "Q. All right. One thing that we can agree on -- I think -- is that Ariosa has indeed made many contributions to excess -- to its success, including not only FORTE, but other non-patented features of its products; correct? A. Correct. Q. And qualitatively, you'd agree that Ariosa's contributions, that don't have anything to do with the plaintiffs' patents, are significant; is that fair? A. I do. I do. Q. But with respect to the contributions made by Ariosa to the success of its Harmony product, you did not ultimately calculate any quantitative adjustment to your royalty calculation; correct? A. Correct." Trial Tr. 1258:24-1259:12.

This failure to apportion wholly undermines the Plaintiffs' damages theory and establishes that the testimony fails under *Daubert* and may not be presented to the jury as a matter of law. Mr. Malackowski's belief that apportionment is unnecessary even when "contributions that don't have anything to do with the plaintiffs' patents" drive the defendant's success is contrary to Federal Circuit case law and requires entry of judgment as a matter of law in Ariosa's favor on the issue of reasonable royalty damages. *See Finjan, Inc. v. Blue Coat Sys., Inc.*, -- F.3d. --, 2018 WL 341882, at *8 (Fed. Cir. Jan. 10, 2018) (reversing damages as a result of failure to apportion unpatented features).

Ariosa also argued in its previous Motion for Judgment as a Matter of Law that Plaintiffs were barred from collecting lost profits damages because Mr. Malackowski's damages theory failed to differentiate between Illumina and Verinata when calculating lost profits. Dkt. 594 at pp. 18-19. Additional testimony supporting this argument includes Mr. Malackowski's admission that he has "combined" Illumina and Verinata when calculating lost profits damages: "Q. Okay. And you've done no breaking out, as you say, between Verinata and Illumina for purposes of your calculations; correct? A. No. They're part of the same company, and I've combined them." Trial Tr. 1199: 20-24; *see also id.* at 1202: 4-13 ("Q. If the jury is asked to decide about damages for Verinata in the '430 patent specifically, we can agree that the $29 million you calculated for 2015 and 2016 should not be included in that; correct? A. That may be true; but I'm not going to agree with it. . . . My focus was not on the -- on splitting that out."). The Federal Circuit has previously rejected such lost profits calculations that refuse to "split[] out" damages between the parent and the subsidiary. *Mars, Inc. v. Coin Acceptors, Inc.*, 527 F.3d 1359, 1366-67 (Fed. Cir. 2008) (rejecting argument that "by virtue of the parent-subsidiary relationship and its consolidated financial statements, 'all [of the subsidiary's] lost profits were inherently lost profits of [the parent patent holder].'"); *see also Poly-Am., L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1311 (Fed. Cir. 2004) (denying lost profits of sister corporation as a matter of law). Accordingly, the Court should enter judgment as a matter of law in Ariosa's favor on the issue of lost profits damages.

6. The Evidence Presented By Plaintiffs Cannot Support A Finding Of Willful Infringement

The evidence at trial precludes a finding of infringement, let alone willful infringement. See Dkt. 594 at 10-13. Ariosa further directs the Court to the testimony of Dr. Eric Wang, who described the "arduous" development process that Ariosa went through to create FORTE, its groundbreaking algorithm to calculate the risk of disomy or trisomy in fetal DNA. Trial Tr. 1346:25. As Dr. Wang described it, at the time that Ariosa was developing FORTE, "no one ha[d] done this before." Trial Tr. 1347:9. Because "there [was] no literature that would help [Ariosa]," the team "d[id]n't really have any compass" and instead had to develop FORTE through "empirical trial and error." Trial Tr. 1347:13-18. This process of developing an entirely new product through months of trial and error is the antithesis of the egregious infringement behavior marked by slavish copying that the Supreme Court found constitutes willful infringement. *See Halo Electronics, Inc. v. Pulse Electronics, Inc*., 136 S. Ct. 1923, 1932 (2016).

B. Judgment On Partial Findings Under Rule 52(c)

Ariosa also requests that the Court at this time enter findings on issues that the Court will decide. "The standard for entering judgment as a matter of law differs under [Rule 50(a) an Rule 52(c)]." *Ritchie v. United States*, 451 F.3d 1019, 1023, n.7 (9th Cir. 2006). "In deciding whether to enter judgment on partial findings under Rule 52(c), the district court is not required to draw any inferences in favor of the non-moving party; rather, the district court may make findings in accordance with its own view of the evidence." *Id.* at 1023. "The court may enter judgment as a matter of law [under Rule 52(c)] with respect to a claim or defense that cannot under the controlling law be maintained or defeated without a favorable finding on that issue." *Id.* "A court may enter judgment on partial findings 'at any time that it can appropriately make a dispositive finding of fact on the evidence.'" *Pentair Thermal Mgmt LLC v. Rowe Indus Inc.*, 2013 WL 1320422, at *13 (N.D. Cal. 2013) (quoting Fed. R. Civ. P. 52 advisory committee notes on 1991 amendment)).

1. The Evidence Requires A Finding In Ariosa's Favor On The Issue Of Assignor Estoppel

Determining whether assignor estoppel applies requires that a court balance the equities. *Diamond Sci. Co. v. Ambico, Inc.*, 848 F.2d 1220, 1225 (Fed. Cir. 1988) ("Our analysis must be concerned mainly with the balance of equities between the parties"); *see also Shamrock Techs., Inc. v. Med. Sterilization, Inc.*, 903 F.2d 789, 793 (Fed. Cir. 1990) ("Assignor estoppel is an equitable doctrine . . . that is mainly concerned with the balance of the equities between the parties.").

The Supreme Court has instructed that, in balancing the equities, "the scope of the right conveyed in the assignment of patent rights before the granting of the patent 'is much less certainly defined than that of a granted patent, and the question of the extent of the estoppel against the assignor of such an inchoate right is more difficult to determine than in the case of the patent assigned after its granting.'" *Diamond Sci.*, 848 F.2d at 1226 (quoting *Westinghouse Elec. & Mfg. Co. v. Formica Insulation Co.*, 266 U.S. 342, 352-53 (1924)). Thus, "the range of relevant and competent evidence in fixing the limits of the subsequent estoppel should be more liberal than in the case of an assignment of a granted patent." *Id.* As the Federal Circuit has explained, the Supreme Court "did not advocate a liberal definition of the invention in favor of the assignee." *Q.G. Prods., Inc. v. Shorty, Inc.*, 992 F.2d 1211, 1213 (Fed. Cir. 1993). "Rather the Court advocated admission of more evidence to determine carefully the limits of the estoppel . . . [i]n other words, because the bounds of the invention are less certain, the Court recommended consideration of ample evidence to define the assignor's representations." *Id.* (emphasis added).

If Drs. Stuelpnagel and Oliphant are not inventors of the claims of the '794 patent that is dispositive of Illumina's assignor estoppel argument. But even if they were determined to be inventors, the Court would then need to undertake a balancing of the equities to resolve the issue.

To answer the question of inventorship, the Court must consider whether Drs. Stuelpnagel and Oliphant conceived of the subject matter of the claims at issue, or whether they conceived of something else that ultimately was not included in the '794 patent. *See Trovan, Ltd. v. Sokymat Sa*, 299 F.3d 1292, 1302 (Fed. Cir. 2002) ("Because co-inventors need not "make a contribution to

the subject matter of every claim of the patent, inventorship is determined on a claim-by-claim basis.") (citation omitted); *Virnetx Inc. v. Apple Inc.*, No. 6:12-CV-855, 2016 WL 1117604, at *3 (E.D. Tex. Mar. 22, 2016) ("If the inventive entity of an independent claim is accurate, a claim that depends from it may not have the same inventive entity. For instance, an inventor may contribute to a patent by conceiving a limitation that is only present in a dependent claim.") (citation omitted). Indeed, if the Court finds that the '794 patent covers "a far broader invention than [Drs. Stuelpnagel and Oliphant] intended to convey," that is sufficient to balance the equities against applying assignor estoppel here. *See Brilliant Instruments, Inc. v. Guide Tech, Inc.*, 2014 WL 576244, at *3 (N.D. Cal. Feb. 12, 2014) (recognizing that the "equities inquiry" surrounding the issue of assignor estoppel required a consideration of whether "the resulting patent . . . cover[s] a far broader invention than the inventor intended to convey").

Ariosa has put forth significant evidence demonstrating that Drs. Stuelpnagel and Oliphant are not inventors of any of the '794 patent claims, and that they did not intend to convey an invention covered in what is claimed in the '794 patent. *See, e.g., Diamond Sci.,* 848 F.2d at 1226; *Brilliant Instruments,* 2014 WL 576244, at *3. Drs. Stuelpnagel and Oliphant both testified that they are not inventors of the claims that issued in the '794 patent. Trial Tr. 1089: 17-19 ("Q. Is your allele-specific extension ligation invention included in any of the claims of the '794 patent? A. No, it is not." [Oliphant]); Trial Tr. 1090:14-16 ("Q. And can you find anything that you invented in the '794 patent claims? A. No, I cannot." [Oliphant]); Trial Tr. 706:5 ("I'm incorrectly listed as an inventor on the '794 patent." [Stuelpnagel]).

Both Drs. Oliphant and Stuelpnagel testified that their invention was contained in only claim 5 of the '727 application—and that it was limited to allele-specific extension-ligation that required perfect complementarity at the interrogation and detection positions within the approximately four terminal bases of the interrogation position. Trial Tr. 854:2-13 (Dr. Stuelpnagel explaining that claim 5 of the '727 patent includes "the critical elements of an interrogation position within the first four terminal bases . . . [a]nd the requirement for perfect complementarity for the extension to occur"); Trial Tr. 1083:24-1086:12 (Dr. Oliphant describing the requirement of perfect complementarity for four terminal bases). Indeed, and Oliphant

confirmed that, for their invention, "substantial complementarity would certainly not suffice" and the "purpose of the invention would not be met" if only substantial complementarity were involved. Trial Tr. 1086:20-1087:9; *see also id.* at 851:15-852:7 (Dr. Stuelpnagel confirming that perfect complementarity—and not substantial complementarity—is a "critical element of the invention"). As Dr. Oliphant explained, while he and Dr. Stuelpnagel signed an oath of inventorship for the '727 patent—the patent application from which the '794 patent ultimately issued—he cannot "find the subject matter of Claim 5 of the '727 application anywhere in the issued '794 claims." Trial Tr. 1090:11-13. Likewise, when asked if "Claim 5 in the ['727] patent application ma[d]e it in to the '794 patent," Dr. Stuelpnagel stated "no, it did not." Trial Tr. 855:6-8.

Illumina argued at trial that Drs. Stuelpnagel and Oliphant are properly named inventors on the '794 patent claims because they allegedly came up with a "singular idea"—extension ligation—which was allegedly an inventive contribution to the claims. Trial Tr. 1591:24-1592:8. Illumina argued that this "singular idea" is recited in claims 19 and 20. Trial Tr. 1592:4-8. But this mischaracterizes the testimony of Drs. Stuelpnagel and Oliphant and misses the point entirely. Drs. Stuelpnagel and Oliphant testified that their invention was not simply extension-ligation, but rather because of the nature of the allele-specificity their invention required, there must also be perfect complementarity at the approximately four bases of the terminal end of the recited interrogation position. Ex. 1028-19 (claiming "a sequence substantially complementary to said first target domain of target sequence"). They further testified about why it is incompatible with the subject matter claimed in the '794 patent. Trial Tr. 1089:15-1090:14 ("Q. Is your allele-specific extension ligation invention included in any of the claims of the '794 patent? A. No, it is not. Q. What makes you say that? A. Well, in Claim 1, for example, there's no allele specificity. There's no genotyping. The purpose of our process was for genotyping; and genotyping is not described here. Q. Would you look at Claim 13 of the '794 patent . . . ? Do you believe that the requirement for substantial complementarity at the interrogation position there covers your allele-specific extension ligation invention? A. No. It would -- it would specifically prohibit genotyping, the very purpose of our invention. Q. Why is that? A. Because substantial complementarity would

allow either allele to give signal in the -- in the assay; and that's not genotyping. Q. Can you find the subject matter of Claim 5 of the '727 application anywhere in the issued '794 claims? A. No, I cannot. Q. And can you find anything that you invented in the '794 patent claims? A. No, I cannot.").

2. The Evidence Requires A Finding In Ariosa's Favor On The Issue Of Equitable Estoppel

Whether a patentee is equitably estopped from asserting its patent against another party is governed by a three-part test laid out in *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1042 (Fed. Cir. 1992). "The first element of equitable estoppel concerns the statements or conduct of the patentee which must 'communicate something in a misleading way.'" *Id.* In other words, "[t]he patentee's conduct must have supported an inference that the patentee did not intend to press an infringement claim[.]" *Id.* The misleading communication may include both "misleading conduct" and "misleading inaction." *Id.* As the second and third elements of the equitable estoppel test, *Aukerman* asks whether the defendant relied on the patentee's conduct, statements, or inaction in conducting the allegedly infringing action and whether the defendant would be materially prejudiced if the patentee is permitted to continue with its infringement action. *Id.* at 1043.

The evidence presented at trial can only support a finding that Illumina's actions allowed Ariosa to reasonably infer that Illumina would not sue Ariosa for infringement of the '794 or '430 patents. On cross examination, Jay Flatley, Illumina's former CEO, admitted that on March 2, 2011, Drs. Stuelpnagel and Song made a presentation to Illumina executives that included Ariosa's freedom to operate opinion. Trial Tr. 649:12-22. As Mr. Flatley described it, at this March 2011 meeting, "[Drs. Stuelpnagel and Song] described the fact that they had done a broad analysis across this set of intellectual property, and draw a conclusion that they had 'Freedom to Operate.'" Trial Tr. 652:11-14. Mr. Flatley also testified that he held a second meeting with Drs. Stuelpnagel and Song in November 2011, which was five months after the '794 patent issued. Trial Tr. 657:4-6. At the November meeting, Drs. Stuelpnagel and Song reiterated their freedom to operate analysis, and Mr. Flatley admitted that he "you didn't raise any questions with Dr.

Stuelpnagel or Dr. Song about the '794 patent" during that meeting. Trial Tr. 657:11-14. Moreover, Mr. Flatley admitted that, after twice being presented with Ariosa's freedom to operate analysis, Illumina then chose to invest an addition $2.4 million in Ariosa. Trial Tr. 657:15-20.

There can be no clearer illustration of misleading actions that support an inference that the patentee does not intent to sue for infringement. ***After being repeatedly presented with Ariosa's analysis that it does not infringe the '794 patent, Illumina's only response was to invest additional money in Ariosa's business***. In doing so, Illumina went beyond simply expressing no disagreement with Ariosa's analysis. The only reasonable interpretation of this scenario is that Illumina affirmatively blessed the correctness of Ariosa's non-infringement analysis by choosing to invest a substantial amount of money in Ariosa, as no reasonable business would provide money to support the actions of another business that it believed was infringing its patents. *See, e.g., High Point SARL v. Sprint Nextel Corp.*, 817 F.3d 1325, 1331 (Fed. Cir. 2016) (allowing for a "continuing business relationship" while remaining "silent as to infringement concerns" contributed to the court's application of equitable estoppel).

Dr. Song explained that Ariosa relied on Illumina's actions to conclude that Illumina would not sue Ariosa for infringement of the '794 or '430 patents. As he described it, he and his colleagues were "floored" when they received Ariosa's breach letter and complaint alleging patent infringement. Trial Tr. 1304:21. Indeed, Ariosa's reliance ran so deep that it planned an entire IPO based (in relevant part) on the reasonable inference that Illumina would not sue them for patent infringement. But as explained above in Section II(A)(3), Ariosa was forced to cancel this IPO the night before it was set to kick off due to Illumina's sudden decision to contradict its previous representations by suing Ariosa for patent infringement. Trial Tr. 1306:10-25. As also described above in Section II(A)(3), by being forced to cancel its IPO, Ariosa has been materially prejudiced by Illumina's maintenance of its infringement action.

III. CONCLUSION

Ariosa respectfully moves for judgment as a matter of law under Rule 50(a) of the Federal Rules of Civil Procedure and Judgment on Partial Findings under Federal Rule of Civil Procedure 52(c). No reasonable jury could find in Plaintiffs' favor on patent validity, express license, breach

of contract and the implied covenant of good faith and fair dealing, or the issue of willful injury. Nor could a reasonable jury find in favor of Plaintiffs on infringement, willfulness, and damages. The evidence also requires this Court to enter judgment in Ariosa's favor on Plaintiffs' affirmative defense of assignor estoppel and Ariosa's affirmative defense of equitable estoppel. Because the evidence permits but one conclusion on all issues, the Court should not present them to the jury and should enter JMOL in favor of Ariosa. The Court should also enter judgment in Ariosa's favor on the issues of assignor estoppel and equitable estoppel.

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Respectfully submitted,

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